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WRA0007-US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:	
MIKHALTSEVITCH, ET AL.	
Serial No.: 10/518,480	Art Unit: 2862
Filed: December 20, 2004	Examiner: Not Assigned Yet
For: PULSE SEQUENCES FOR EXCITING NUCLEAR QUADRUPOLE RESONANCE	

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicants wish to make of record in the above-identified application the document or documents referenced on the attached Form PTO-1449. A copy of each reference (if required) is enclosed herewith.

The undersigned believes that this Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits for the above-referenced application. Accordingly, Applicants do not believe that a fee is due for filing this paper. However, should a first action on the merits have been issued on the same day or before this Information Disclosure Statement is filed, please accept this Information Disclosure Statement under Rule 97(c) and charge the requisite Rule 17(p) fee to our Deposit Account No. 03-3975, under Order No. WRA0007-US and proceed to consider this Information Disclosure Statement.

It is respectfully requested that the information be expressly considered during the prosecution of this application, and that each reference be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This submission does not represent that any referenced document is material or constitutes "prior art." If it should be determined that one or more of the referenced documents constitute "prior art" under United States law, Applicants reserve the right to present to the Office the relevant facts and law regarding the appropriate status of the reference or references.

Applicants further reserve the right to take appropriate action to establish the patentability of the disclosed invention over any referenced document, should it be applied against the claims of the present application.

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Respectfully submitted,

MIKHALTSEVITCH, ET AL.

Date: February 7, 2006

By: Lawrence D. Lee (41,009)
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Registration No. 32,329

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MDB/SPA/ge

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Sheet 1 of 4

Complete if Known	
Application Number	10/518,480
Filing Date	December 20, 2004
First Named Inventor	MIKHALTSEVITCH, ET AL.
Art Unit	2862
Examiner Name	Not Assigned Yet
Attorney Docket Number	WRA0007-US

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number- Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US5,233,300	08/03/1993	Buess et al.	
		US5,365,171	11/15/1994	Buess et al.	
		US5,608,321	03/04/1997	Garroway et al.	
		US6,392,408	05/21/2002	Barrall et al.	
		US6,577,128	06/10/2003	Smith et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]- Number[4] - Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
		WO 92/17794	10/15/1992	British Technology Group		
		WO 93/11441	06/10/1993	British Technology Group		
		WO 96/26453	08/29/1996	British Technology Group		
		WO 99/19740	04/22/1999	BTG International Limited		
		GB 2 338 787	12/29/1999	Quantum Magnetics, Inc.		
		GB 2 200 462	08/03/1988	National Research Dev. Corp.		
		GB 2 255 414	11/04/1992	British Technology Group		☐
		SU 1,831,680	7/30/1993	Kuznetsov et al.		☐
		SU 1,824,559	06/30/1993	Kuznetsov et al.		☐
		International Search Report dated 8/4/2003				

Examiner Signature		Date Considered	

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[1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
		Flexman, et al., "The Detection of Explosives in Airport Luggage Using the Direct Nuclear Quadrupole Resonance Method," Detection of Bulk Explosives Advanced Techniques Against Terrorism, Proceedings of the NATO Advanced Research Workshop, held in St. Petersburg, Russia, 16-21 June, 2003, Series: NATO Science Series II: Mathematics, Physics and Chemistry, Schubert; Kuznetsov (Eds.) Vol. 138, 2004, p. 113-124	☐
		Garroway, et al., "Explosives Detection by Nuclear Quadrupole Resonance (NQR)," SPIE Vol. 2276, 1994, pp. 139-149	☐
		Garroway, et al., "Narcotics and Explosives Detection by 14N Pure NQR," SPIE Vol. 2092, 1993, pp. 318-327	☐
		Chen and Slichter, "Zero-Field NMR Study on a Spin-Glass: Iron-Doped 2H-Niobium Diselenide," Physical Review B, Vol. 27, No. 1, 1 January 1983, pp. 278-292	☐
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		Erickson, "Optically Detected Multipulse Nuclear-Quadrupole-Resonance Studies of Trivalent Praseodymium in Zero and Weak Static Magnetic Fields," Phyiscal Review B, Vol. 39, No. 10, 1 April 1989, pp. 6342-6347	☐
		Singh and Armstrong, "Spin Thermodynamics Applied to Pure Nuclear Quadrupole Resonance for an Inhomogeneously Broadband Line in a Spin-3/2 System," Journal of Physics C: Solid State Physics, Vol. 19, 1986, pp. L221-L227	☐
		Bai, et al., "Zeeman-Perturbed Spin-Echo FT NQR Spectroscopy," Journal of Magnetic Resonance Series A, Vol. 102, 1993, pp. 137-143	☐

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		Shastri, et al., "Distribution of Nonequivalent Aluminum Sites Revaled in Al-Cu-Ru and Al-Cu-Fe Quasicrystals by ^{27}Al NQR," Physical Review B, Vol. 50, No. 6, 1 August 1994, pp. 4224-4227	☐
		Nickel and Kimmich, "2D Exchange NQR Spectroscopy," Journal of Molecular Structure, Vol. 345, 1995, pp. 253-264	☐
		Kohori, et al., "^{27}Al NMR and NQR Studies of the Antiferromagnetic Superconductor UPd_2Al_3," Solid State Communications, Vol. 95, No. 2, 1995, pp. 121-126	☐
		Peterson and Oja, "A Pulsed Nuclear Quadrupole Resonance Spectrometer," Advances in Nuclear Quadrupole Resonance, Vol. 1, ed. J.A.S. Smith (London: Heyden), 1974, pp. 179-184	☐
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		Hirschfeld and Klainer, "Short Range Remote NQR Measurements," Journal of Molecular Structure, Vol. 58, 1980, pp. 63-77	☐
		Grechishkin, "NQR Device for Detecting Plastic Explosives, Mines and Drugs," Applied Physics A, Vol. 55, 1992, pp. 505-507	☐
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		Grechishkin, "Application of Multipulse Sequences in Remote NQR," Applied Physics A, Vol. 58, 1994, pp. 63-65	☐
		Klainer, et al., "Fourier Transform Nuclear Quadrupole Resonance Spectroscopy," in "Fourier, Hadamard and Hilbert Transforms in Chemistry," A.G. Marshall, Ed. Plenum, New York, 1982, pp. 147-182	☐

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		Maricq, "Quasistationary State and its Decay to Equilibrium in the Pulsed Spin Locking of a Nuclear Quadrupole Resonance," Phyiscal Review B, Vol. 33, No. 7, 1 April 1986, pp. 4501-4513	☐
		Alexander and Tzalmona, "Relaxation by Slow Motional Processes. Effect of Molecular Rotations in Pure Quadrupole Resonance," Physical Review, Vol. 138, No. 3A, 3 May 1965, pp. A845-A855	☐
		Carr, "Steady-State Free Precession of Nuclear Magnetic Resonance," Physical Review, Vol. 112, No. 5, 1 December 1958, pp. 1693-1701	☐
		Osokin, et al., "The Quasistationary States in Multipulse NQR," Z. Naturforsch, Vol. 47A, 1992, pp. 439-445	☐
		Osokin and Shagalov, "NQR Transient Nutation and Rotary Echoes in the Effective Field of Multiple-Pulse Sequences," Solid State Nuclear Magnetic Resonance, Vol. 10, 1997, pp. 63-72	☐
		Liao and Zax, "Analysis of Signal-to-Noise Ratios for Noise Excitation of Quadrupole Nuclear Spins in Zero Field," Journal of Physical Chemistry, Vol. 100, No. 5, 1996, pp. 1483-1487	☐
		Marino and Klainer, "Multiple Spin Echoes in Pure Quadrupole Resonance," The Journal of Chemical Physics, Vol. 67, No. 7, 1 October 1997, pp. 3388-3389	☐
		Hitrin, et al., Pulsed Spin Locking Theory in Pure Quadrupole Resonance," Vol. 83, 1982, pp. 269-275	☐
		Zussman, "Effect of Molecular Reorientation in Urea on the ^{14}N PNQR Linewidth and Relaxation Time," The Journal of Chemical Physics, Vol. 58, No. 4, 15 February 1973, pp. 1514-1522	☐
		Bradford, et al., "A Steady-State Transient Technique in Nuclear Induction," Physical Review, Vol. 84, No. 1, 1951, pp. 157-158	☐
			☐

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